REMARKS

Explanation of claim amendments

By this amendment claims 1, 4, 10-15, 17, 20-25, 27, 29-31, 33, 38, 40, 41, 43, 44 and 46 are amended. Claims 42 and 47 are cancelled. Claims 1-41 and 43-46 remain in the application.

Claim 1 has been limited to claiming the anode in contact with molten electrolyte for electrowinning aluminium from alumina dissolved in the molten electrolyte, i.e. in a cell for the electrowinning of aluminium that contains a molten electrolyte in which alumina is dissolved.

The dependencies of claims 4, 10-15, 17, 20-25, 27, 29-31, 33, 38, 40, 41, 44 and 46 have been simplified.

Claim 33 has been aligned with claim 1 specifying the step of contacting the anode with the molten electrolyte.

Claim 43 has been amended to claim the anode of claim 1.

Method claim 44 has been amended to electrowinning aluminium using an anode in a cell as defined in claim 1.

Claim rejection – 35 USC § 112

Claim 47 was rejected under 35 USC 112, second paragraph, as being indefinite. This claim has now been cancelled which removes the objections.

Claim objections

Claims 16-32 and 40-46 were objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. This objection has been removed by the above-explained claim amendments.

Claim rejections – 35 USC § 102

Claims 1, 3 and 29 were rejected under 35 USC 102(b) as being anticipated by Kishi et al (US 5,954,928). The applicants respectfully dispute this rejection in respect of the now-amended claims for the reasons given below.

Kishi describes an activated cathode capable of electrolyzing a solution of alkali metal salt such as alkali-metal halide, alkali-metal hydroxide or the like with a low hydrogen overvoltage for a long term (col. 1 lines 6-10), See also col. 1 lines 12-38. All of Kishi's examples are aqueous electrolytes at about 80°C.

Kishi has no disclosure or suggestion of aluminium electrowinning; nor using a molten electrolyte containing dissolved alumina, nor of an anode for electrowinning aluminium that is in contact with a molten electrolyte.

Claim 1 is hence novel over Kishi for this reason, and the same applies to claims 3 and 29.

Claims 1, 4, 5 and 29 were rejected under 35 USC 102(b) as being anticipated by Lim at al (US 5,248,510).

The applicants respectfully traverse this objection in respect of the now-amended claims.

Lim describes cobalt oxide passivation of nickel battery electrode substrates. Lim has no disclosure or suggestion of aluminium electrowinning; nor using a molten electrolyte containing dissolved alumina, nor of an anode for electrowinning aluminium that is in contact with a molten electrolyte. Claim 1 is hence novel over Lim. The same applies to claims 4-5 and 29.

Non-obviousness – 35 USC § 103

The applicants submit that claim 1 as now amended and all claims of the now amended application are unobvious and inventive over the citations Kishi et al (US 5,954,928) and Lim et al (US 5,248,510) for the following reasons.

The application has been explicitly limited to the electrowinning of aluminium in a cell containing a molten electrolyte in which aluminium is dissolved, and is specifically concerned with an anode for electrowinning aluminium which is in contact with the molten electrolyte and which has an integral CoO-containing outer surface on a cobalt-containing outwardly-facing metallic surface.

Aluminium electrowinning from a molten electrolyte containing dissolved alumina is a specific field of endeavour as explained in the application's Background Art section, page 1, line 7 to page 3, line 4.

Kishi on the other hand relates to aqueous electrolysis of alkali metal salts at about 80°C and is particularly directed to an activated cathode.

The skilled person seeking to improve an anode for electrowinning aluminium from a molten salt electrolyte containing dissolved alumina had no reason to consult Kishi's teaching and, if he did consult it, he would not find the teaching in any way useful for the production of an anode for electrowinning alumina for a molten salt electrolyte containing dissolved alumina. It follows the applicants' claimed invention cannot be reached in any obvious way starting from Kishi.

As regards Lim, his teaching concerns cobalt oxide passivation of nickel battery electrode substrates which is remote from aluminium electrowinning.

The skilled person seeking to improve an anode for electrowinning aluminium from a molten salt electrolyte containing dissolved alumina had no reason to consult Lim's teaching and, if he

did consult it, he would not find the teaching in any way useful for the production of an anode for electrowinning alumina for a molten salt electrolyte containing dissolved alumina. It follows the applicants' claimed invention cannot be reached in any obvious way starting from Lim.

Furthermore, it is evident that no theoretical combination of Kishi and Lim is pertinent to applicants invention, as both these citations are from very different fields.

In summary, the applicants submit that amended claim 1 as well as claims 2-41 and 43-46 are all unobvious and inventive over the Kishi and Lim citations.

Double patenting

The applicants have filed terminal disclaimers in respect of applications N° 10/591,635 and 10/591,634.

Favorable reconsideration is therefore respectfully requested.

Respectfully submitted,

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